



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/637,188	08/08/2003	Farook Afsari	ECULL-00101	3949
28960	7590	01/30/2006	EXAMINER	
HAVERSTOCK & OWENS LLP 162 NORTH WOLFE ROAD SUNNYVALE, CA 94086			MILLER, JONATHAN R	
			ART UNIT	PAPER NUMBER
			3653	
DATE MAILED: 01/30/2006				

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	Application No. 10/637,188	Applicant(s) AFSARI, FAROOK	
	Examiner Jonathan R. Miller	Art Unit 3653	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☒ Responsive to communication(s) filed on 14 November 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☒ Claim(s) 1-69 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-69 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

## DETAILED ACTION

### *Continued Examination Under 37 CFR 1.114*

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 11/14/05 has been entered.

### *Claim Rejections - 35 USC § 103*

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 1 – 69 are rejected under 35 U.S.C. 103(a) as being unpatentable over Christian et al. The reference discloses a plurality of sorting devices for receiving an input feed of different colored objects and sorting the different colored objects into a plurality of output feeds, wherein at least one output feed in the plurality of output feeds is a subsequent input feed to one or more sorting devices in the plurality of sorting devices (Figs. 2 and 11) and further wherein at least one of the plurality of sorting devices sorts the different colored objects into more than two output feeds (Fig. 12; col. 7, lines 55+). Examiner acknowledges that the features are shown in different embodiments of the reference. At the time of the invention, however, it would have been obvious to one of ordinary skill in the art to combine the different embodiments to achieve

Art Unit: 3653

a purer sort or more groupings. For example, the apparatus of Fig. 2 could be modified by placing the apparatus of Fig 12 as the last sorter.

4. With regards to claim 2, the reference further discloses the one or more sorting devices sort the at least one subsequent input feed into a plurality of further sorted output feeds (Fig. 2).

5. With regards to claim 3, the reference further discloses a final sorting device, wherein the final sorting device sorts one or more subsequent input feeds into a plurality of final output feeds (Fig. 11).

6. With regards to claims 4, 21, 34, the reference further discloses at least one of the of output feeds contains objects of a desired color (Fig. 11).

7. With regards to claims 5, 19, 32, 45, the reference further discloses at least one of the of output feeds contains undesired objects, wherein the undesired objects are directed to a rejection bin (Fig. 2).

8. With regards to claims 6, 20, 33, the reference further discloses at least one of the of output feeds contains flint objects (Fig. 12). Examiner contends that the clear glass (shown in Fig. 2) inherently encompasses flint glass.

9. With regards to claim 7, the reference further inherently discloses the final sorting device directs each of the plurality of final output feeds into a plurality of corresponding storage bins (Fig 12).

10. With regards to claims 8, 22, 36, the reference further discloses the objects are glass cullets (abstract).

Art Unit: 3653

11. With regards to claims 9, 23, 37, 51, 64, the reference further discloses each sorting device sorts the received different cullets based on light transmission properties of the colored cullets (col. 3, lines 1+).

12. With regards to claims 10, 24, 38, 52, 65, the reference further discloses each sorting device further comprises a light emitting source for transmitting at least one light of predetermined frequency through the glass cullet (col. 3, lines 1+).

13. With regards to claims 11, 26, 40, 53, 66, the reference further discloses each sorting device further comprises a sensor module coupled to the light emitting source and configured to receive light transmitted through the glass cullet, wherein the sorting device determines the color of the cullet from the at least one light received (col. 3, lines 1+).

14. With regards to claims 12, 25, 39, 54, 67, the reference further discloses the light emitting source includes one or more of a red light emitting diode, a green light emitting diode, a blue light emitting diode and an infrared light source (col. 3, lines 1+).

15. With regards to claim 13, 41, 55, 68 the reference further discloses at least one actuator coupled to the sensor module, wherein the at least one actuator directs the cullet to one of the output feeds depending on a signal provided by the sensor module (col. 3, lines 1+).

16. With regards to claims 14, 27, 28, 42, 56, 69, the reference further discloses at least one actuator coupled for directing the object to one of output feeds depending on a color characteristic of the object (col. 3, lines 1+).

17. With regards to claim 15, the reference further discloses a method of effectively sorting a group of different colored objects into separate groups of similar colored objects comprising: a. receiving an input feed having a plurality of objects; and b. sorting the input feed into more than

Art Unit: 3653

two output feeds (Fig. 12), wherein at least one output feed in the plurality of output feeds serves as a subsequent input feed (Fig. 2). Examiner acknowledges that the features are shown in different embodiments of the reference. At the time of the invention, however, it would have been obvious to one of ordinary skill in the art to combine the different embodiments to achieve a purer sort or more groupings. For example, the apparatus of Fig. 2 could be modified by placing the apparatus of Fig 12 as the first sorter.

18. With regards to claims 16, 30, the reference further discloses further sorting the at least one subsequent input feed into a plurality of subsequent output feeds (Fig. 2).

19. With regards to claims 17, 31, the reference further discloses receiving at least one of the plurality of subsequent output feeds thereby forming a received feed and sorting the received feed into a plurality of final output feeds (Fig. 2).

20. With regards to claims 18, 35, the reference further inherently discloses directing each of the plurality of final output feeds into a corresponding container (Fig. 12).

21. With regards to claim 29, the reference further discloses a method of effectively sorting different colored objects into a plurality of groups of objects having a similar desired quality, the method comprising: a. providing a plurality of sorting devices, wherein each sorting device receives a mixture of objects of different qualities and separates the different received objects into two or more output feeds, each output feed having objects of a substantially similar quality, wherein at least one of the plurality of sorting devices sorts the different colored objects into more than two output feeds (Fig. 12); and b. configuring the plurality of sorting devices such that at least one output feed in each of one or more sorting devices in the plurality is input into a corresponding subsequent sorting device (Fig. 2). Examiner acknowledges that the features are

shown in different embodiments of the reference. At the time of the invention, however, it would have been obvious to one of ordinary skill in the art to combine the different embodiments to achieve a purer sort or more groupings. For example, the apparatus of Fig. 2. could be modified by placing the apparatus of Fig 12 as the last sorter.

22. With regards to claim 43, the reference further discloses a multi-level sorting system for separating different colored cullets into cullets having substantially similar color characteristics comprising: a. a first means for sorting the cullets, wherein the first means for sorting directs the sorted cullets into more than two first output paths (Fig. 12); b. a second means for further sorting at least one received first output path, wherein the second means for sorting directs the further sorted cullets into more than two second output paths (Fig. 11); c. a third means for subsequently sorting at least one received first output path and at least one received second output path, wherein the third means for sorting directs the subsequently sorted cullets into more than two output paths (Figs. 2, 11 and 12). Examiner acknowledges that the features are shown in different embodiments of the reference. At the time of the invention, however, it would have been obvious to one of ordinary skill in the art to combine the different embodiments to achieve a purer sort or more groupings. For example, the apparatus of Fig. 2 could be modified by placing the apparatus of Fig 12 as all the sorters. Alternatively, the apparatus of Fig. 11 could be modified by placing the apparatus of Fig 12 as all the sorters.

23. With regards to claim 44, the reference further discloses a multi-level sorting system for separating a mixed stream of colored cullets into cullets having substantially similar color characteristics comprising: a. a first stage tri-sorter for sorting the cullets, wherein the first stage tri-sorter directs the sorted cullets into a plurality of first stage output paths; b. a second stage tri-

Art Unit: 3653

sorter coupled to the first stage tri-sorter, the second stage tri-sorter for sorting cullets in at least one received first stage output path, thereby forming a second set of sorted cullets, wherein the second stage tri-sorter directs the second set of sorted cullets into a plurality of second stage output paths; a third stage tri-sorter coupled to the first and second stage tri-sorters, the third stage tri-sorter for sorting cullets in at least one received first stage output path and at least one received second stage output path, thereby forming a third set of sorted cullets, wherein the third stage tri-sorter directs the third set of sorted cullets into a plurality of third stage output paths; wherein at least one of the first, second and third stage tri-sorters has more than two output paths. (Figs. 2, 11 and 12). Examiner acknowledges that the features are shown in different embodiments of the reference. At the time of the invention, however, it would have been obvious to one of ordinary skill in the art to combine the different embodiments to achieve a purer sort or more groupings. For example, the apparatus of Fig. 11 could be modified by placing the apparatus of Fig 12 as all the sorters. The reference discloses a sorter with three distinct outputs (Fig. 12) and the ability to link the sorters in series and parallel paths (Figs. 2 and 11).

24. With regards to claims 45, 58, the reference further discloses cullets in one of the plurality of first output paths are sent to a rejected material bin (Fig. 2).

25. With regards to claims 46, 59, the reference further discloses cullets in one of the plurality of second output paths are sent to a rejected material bin (Fig. 11).

26. With regards to claims 47, 60, the reference further discloses cullets in one of the plurality of second output paths are sent to a high quality flint cullet bin (Fig. 2). The reference inherently discloses that the sorting can take place in a different order (col. 2, lines 50; Fig. 5)

Art Unit: 3653

27. With regards to claims 48, 61, the reference further discloses cullets in one of the plurality of third output paths are sent to a high quality green cullet bin (Fig. 2). The reference inherently discloses that the sorting can take place in a different order (col. 2, lines 50; Fig. 5)

28. With regards to claims 49, 62, the reference further discloses cullets in one of the plurality of third output paths are sent to a rejected material bin (Fig. 2). The reference inherently discloses that the sorting can take place in a different order (col. 2, lines 50; Fig. 5)

29. With regards to claims 50, 63, the reference further discloses cullets in one of the plurality of third output paths are sent to a high quality brown cullet bin (Fig. 2). The reference inherently discloses that the sorting can take place in a different order (col. 2, lines 50; Fig. 5)

30. With regards to claim 57, the reference further discloses a multi-level sorting system for separating a mixed stream of colored cullets into cullets having substantially similar color characteristics comprising: a. a plurality of first stage tri-sorters for sorting the cullets, wherein the plurality of first stage tri-sorters direct the sorted cullets into a plurality of first output paths; b. a second stage tri-sorter coupled to the plurality of first stage tri-sorters, the second stage tri-sorter for sorting cullets in at least one received first output path from each first stage tri-sorter, thereby forming second sorted cullets, wherein the second stage tri-sorter directs the second sorted cullets into a plurality of second output paths; a third stage tri-sorter coupled to the plurality of first stage tri-sorters and the second stage tri-sorter, the third stage tri-sorter for sorting cullets in at least one received first output path from each of the plurality of first stage tri-sorters and at least one received second output path, thereby forming third sorted cullets, wherein the third stage tri-sorter directs the third sorted cullets into a plurality of third output paths (Fig. 2). Examiner acknowledges that the features are shown in different embodiments of the

Art Unit: 3653

reference. At the time of the invention, however, it would have been obvious to one of ordinary skill in the art to combine the different embodiments to achieve a purer sort or more groupings. For example, the apparatus of Fig. 11 could be modified by placing the apparatus of Fig 12 as all the sorters. The reference discloses a sorter with three distinct outputs (Fig. 12) and the ability to link the sorters in series and parallel paths (Figs. 2 and 11). Examiner contends that the sorters disclosed in Fig. 2 are tri-sorters, as they can in unison sort into three groups of outputs. What is a tri-sorter? The claim does not require a tri-sorter to have three distinct outputs. Additionally, the reference discloses a sorter with three distinct outputs (Fig. 12) and the ability to link the sorters in series and parallel paths (Figs. 2 and 11).

### *Response to Arguments*

31. Applicant's arguments, see pages 12-16, filed 10/17/05, with respect to the rejection(s) of claim(s) 1-69 under Christian et al. have been fully considered and are persuasive in so far as that the reference did not disclose all of the limitations within a single embodiment. Therefore, the rejection has been withdrawn. However, upon further consideration, a new ground(s) of rejection is made in view of Christian et al. Examiner's reasoning is stated above.

32. Applicant's arguments with respect to the Ichise and Frankel references have been considered but are moot in view of the new ground(s) of rejection.


Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jonathan R. Miller whose telephone number is (571) 272-6940. The examiner can normally be reached on M-F: 8:30AM-5:00PM.

Art Unit: 3653

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Kathy A. Matecki can be reached on (571) 272-6951. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

jrm

A handwritten signature in black ink that reads "Kathy Matecki". The signature is written in a cursive, flowing style.

**KATHY MATECKI  
SUPERVISORY PATENT EXAMINER  
TECHNOLOGY CENTER 3600**